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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,096	09/28/2000	Hsin-Chu Tsai	042390.P8829	9115

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EXAMINER
MONESTIME, MACKLY

ART UNIT	PAPER NUMBER
2676	

DATE MAILED: 02/20/2004

15

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 December 2003*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

Response to Amendment

1.   The amendment received on December 12, 2003, has entered and carefully considered.

Claims 1-24 are still pending in the application.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999

(AIPA) do not apply to the examination of this application as the application being examined was

not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b).

Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the

AIPA (pre-AIPA 35 U.S.C. 102(e)).

3.   Claims 1-4, 6-8, 11-12, 14-16 and 20-23 are rejected under 35 U.S.C. 102(e) as being

anticipated by Desormeaux (US Patent No. 6,094,203).

4.   As per claims 1-2, 11 and 20-21, Desormeaux disclosed the invention as claimed,

including a computer system comprising: a central processor unit to execute non-graphics

instructions (Fig. 1, Item No. 1006) a graphics core to compute graphical transformations via

supersampling techniques (Fig. 1, Item No. 1002); and a unified graphics cache coupled to the

graphics core (Fig. 1, Item No. 1004). Desormeaux did not explicitly disclose that the unified

graphics cache store supersampling image. However, Desormeaux did disclose the steps of

processing a data set representing a three dimensional volume by assigning a color and a opacity

to each volume element, and projecting them onto an image plane; therefore, Desormeaux

inherently disclosed the step of storing supersampling image.

5.   As per claims 3 and 22, Desormeaux disclosed a central processing unit and a CPU cache

coupled to the CPU core (Fig. 1, Items No. 1006, 1008).

6.   As per claims 4 and 23, Desormeaux disclosed a bus interface coupled to the CPU cache

and the graphics cache (Fig. 1, Item No. 1004, 1008).

7.   As per claim 6, Desormeaux disclosed a main memory coupled to the bus interface (Fig.

1, Item No. 1012).

8.   As per claims 7-8, 12, 14 and 15-16, Wilde disclosed that the graphics core amplifies

polygons and renders the polygons into the graphics cache; and image polygons are implemented

via viewport transformation (col. 1, lines 25-64; col. 3, lines 39-47).

Claim Rejections - 35 U.S.C. § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10.   Claims 5, 19 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Desormeaux in view of Wilde (US Patent No. 5,828,382).

11.   Wilde was cited in the last office action.

12.   As per claims 5, 19 and 24, Desormeaux did not explicitly disclose that the graphics core

operates according to a tile based rendering architecture. However, the concepts and associated

advantages of using a tile based rendering architecture are well known in the art. It can be

evidenced in the reference by Wilde in which a tile based rendering technique is used (col. 3, lines

11-26). It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to have utilized the tile based rendering architecture taught by Wilde into the

system of Desormeaux because doing so would provide greater design flexibility and efficiency by

allowing different memory arrangement in a tile oriented operation, thereby enhance the

processing speed of the graphics system.

Claims 9, 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Desormeaux in view of Pfister et al (US Patent No. 6,448,968).

13.   Pfister et al was cited in the last office action.

14.   As per claims 9, 13 and 17, Desormeaux did not disclose that the graphics core

downsampling the image polygons after the polygons have been rendered. However, Pfister et al

disclosed the use of a downsampling technique (col. 12, lines 2-10). Moreover, numerous

downsampling methods are well known in the graphics art; for instance downsampling often

refers to a sampling of the image data by a factor of two in both the horizontal and vertical

directions. In addition, the downsampled pixel value of a block of pixels in an image may be the

medium value of all pixels in that block, wherein the block size is four pixels, which is typical, the

values of the pixels in the block may be added together and divided by four. Therefore, it would

have been obvious to a person of ordinary skill in the art at the time the invention was made to

have utilized the downsampling technique taught by Pfister et al into the system of Desormeaux

because doing so would enhance the quality of the resulting image.

15.   Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Desormeaux view of Pfister et al as applied to claims 1-9 and 11-17 above, and further in view of

Li et al (US Patent No. 5,860,060).

16.   Li et al was cited in the last office action.

17.   As per claims 10 and 18, the combination did not disclose the downsampling of the image

polygons are implemented by executing a bit aligned block transfer. However, the use of a bit

aligned block transfer is well known in the graphics art. It can be evidenced in the reference by Li

et al in which a bit blt hardware accelerator is used (col. 7, lines 19-20). It would have been

obvious to a person of ordinary skill in the art at the time the invention was made to combine the

cited references because doing so would provide   high quality "antialiased" text and graphics

without requiring the calculation of colors by the host processor.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Mackly Monestime whose telephone number is (703) 305-3855. The

examiner can normally be reached on Monday to Thursday from 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

Matthew Bella, can be reached on (703) 308-6829.

Any response to this action should be mailed to:

Commissioner of Patent and Trademarks
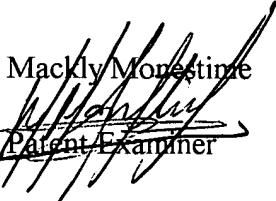
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,

Arlington, Va, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Technology Center 2600 Customer Service Office whose telephone

number is (703) 306-0377.

Mackly Monestime
Patent Examiner

February 11, 2004

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600